Indiana Department of Education
SUPPORTING STUDENT SUCCESS

CLASSROOM INNOVATION IN MATHEMATICS GRANT 2010-11

OVERVIEW

Purpose: From 2005 to 2009, state scores in mathematics were stagnant, rising only one percentage point over the four-year span. At the state level, IDOE is currently exploring new, innovative classroom strategies that will help to push mathematics in Indiana forward. One such strategy is the integration of digital curriculum and technology into traditional teaching methodologies.

The purpose of the program is to provide a select number of LEAs with the opportunity to use digital mathematics curricula, technology-based instruction, and interactive white boards in lieu of traditional textbooks. This grant provides an opportunity for LEAs to pilot digital curriculum which can be readily aligned to changes in standards and to determine its effectiveness with their student populations and within their contexts. Following the grant, LEAs will either continue the use of digital curriculum through their textbook rental program or discontinue use of the digital curriculum and seek an alternative for curricular materials. Digital curriculum would need to utilize innovative strategies for instruction and represent a significant break from the traditional textbook-oriented instruction and be approved by the IDOE, but it would not serve as a standalone, online course that replaces the classroom teacher. In order to evaluate the effectiveness of these strategies, awards will be limited to schools that propose plans for either: 6th Grade, 7th Grade, 8th Grade, and/or Algebra I. The results of this pilot program will be used to evaluate the effectiveness of digital curriculum and provide data for schools that may look at adopting digital mathematics curricula in the future.

This grant program is funded through the David C. Ford Fund.

Application: Please fill out each part completely. For assistance, you may contact Zach Foughty at zfoughty@doe.in.gov or Phone: (317) 233-5019

I. GENERAL INFORMATION

1. Corp # 2120	**2. Corp Name** Greater Jasper Consolidated Schools	
3. Corp Address (Street, City, State, Zip) 1520 St. Charles Street; Jasper, IN 47546		**4. Telephone** 812-482-1801
5. Contact Person's Name Dr. Tracy Lorey	**6. Contact Person's Email Address** tlorey@gjcs.k12.in.us	
7. Contact Person's Address (Street, City, State, Zip) 1520 St. Charles Street; Jasper, IN 47546		**8. Contact Person's Telephone** 812-482-1801
9. Superintendent's Name Dr. Jerrill Vandeventer	**10. Superintendent's Email Address** jvandeve@gjcs.k12.in.us	
11. # of Schools Participating 2	**12. # of Students Being Served** Approximately 1010 Students	**13. # of Teachers Participating** 9

II. Project Abstract
Briefly describe the proposed project clearly and concisely using the space provided.

Greater Jasper Consolidated Schools is committed to providing educational experiences and opportunities that create life-long learners. The digital age in which our students function outside of our school inspires us to explore technology as a tool that will expand the strategies teachers use for instruction to more effectively engage and motivate learners and promote increases in student performance in mathematics in grades 6-8 and Algebra I. Participation in the Innovation in Mathematics Grant will expedite our ability to offer teachers and students a curricular program that is research-based, focuses on mathematics academic standards, provides engaging and motivating instruction, allows for an efficient and effective adaptable curriculum, and provides innovative real-time feedback on student performance which allows for instructional modifications that meet the unique learning needs of our students.

Although above the state average percent passing, trends in student cohort performance on the mathematics portion of the ISTEP+ (Fall Assessment Window) at Jasper Middle School indicate inconsistent performance over the past three years.

	Grade 6	Grade 7	Grade 8
06-07	89	88	82
07-08	87	91	86
08-09	79	82	81

Further disaggregation of data indicate special populations of students in special education and who have limited-English fall below acceptable levels of performance. The performance of Algebra I students on the End-of-Course Assessment during the same period indicate lower than expected achievement. The percent passing rates are 39%, 38%, and 68.8% respectively.

Instructional strategies employed in classrooms are reflective of traditional, text-driven teaching,

learning, and assessment models. Adoption of a research-based digital curriculum integrating technology will offer teachers and students instructional pedagogy that is systemic, vertically aligned across grade levels, and include comprehensive support that will enhance teacher effectiveness and student performance.

The use of a digital curriculum will engage and motivate students toward a deeper understanding of mathematical concepts and academic standards through interactive animations, puzzles, and explorations; multiple representations; employ a functions approach to teaching and learning with strong conceptual framework consistent with NCTM goals; as well as providing formative assessments that will serve to inform instruction and support student learning.

The use of online formative and summative assessments both standardized and teacher developed, will serve as measures of student performance, guide instructional planning, aide in the development of learning interventions, and ultimately gauge the effectiveness of instruction through the digital curricula and yield high student performance. The addition of Acuity Algebra will further complement the current use of Acuity diagnostic assessments as a formative measure of student progress on mastery of Indiana Academic Standards as well as determining appropriate interventions for each student based upon their unique learning needs.

Limited computer lab capacity at both Jasper Middle School and Jasper High School prohibit all students from being able to participate in online testing. Grant funds would allow for increasing our computer lab. Online assessment and application of subsequent data analysis for informing teaching, learning, and program needs could be accomplished more efficiently and effectively.

Fidelity of implementation can only occur when teachers are knowledgeable and prepared to effectively utilize the digital curricula and technology, as well as conceptually applying differentiated instruction strategies based upon student performance data. Quality professional

development will introduce teachers to high-yield practices for successfully integrating technology into classroom instruction and supporting students of varied educational backgrounds. Internalization of the instructional practices will be assure through guided planning, effective management of support tools, formal staff in-service, peer collaboration and modeling, and principal evaluation.

Please complete <u>one</u> grant narrative for your LEA which includes all schools. Narratives should be double spaced, 12pt Times New Roman font, and not to exceed 10 pages.

III. GRANT NARRATIVE

***Software Choice and Rationale*: Identify the digital content program you have selected. Describe how this program aligns with the purpose of the grant. Describe how this program will address the instructional needs of your students and teachers.**

GJCS has selected Agile Mind as the digital curricula in grades 6-8 and Algebra I mathematics for the 2010-2011 school-year. Agile Mind, developed by the Charles A. Dana Center, offers a strong research-based content aligned to rigorous requirements of college preparation. The instructional pedagogy is systemic, vertically aligned across grade levels, and includes comprehensive supports that enhance teacher effectiveness. The supports include professional development in content and pedagogy, lesson planning and daily instructional support, classroom presentation tools, and aligned formative assessments.

Agile Mind supports teachers as the center of instruction with a technology-based instructional program that is innovative and integrates digital curriculum and technology into traditional teaching methodologies. Agile Mind will be the core instructional program for all students in grades 6-8 and Algebra I. The program will enhance teacher effectiveness and build our capacity to deliver high-quality mathematics instruction. Student directed support is designed as after-instruction reinforcement.

Agile Mind's content will engage students through animations, puzzles, and explorations; enable multiple representations for deeper understanding of standards; offer a strong contextual framework; provide formative assessment that serve concept and skill development, inform instruction, and support student learning. Student learning will also be enhanced and supported through online learning tools and weekly scheduled visits to the computer lab as a means to reinforce mastery of academic standards and delivery of assessment.

We are committed to implementing Agile Mind with fidelity, and ensure teachers and

administrators will enact the services as designed by the Dana Center.

***Professional Development*: Describe the PD needs of your teacher for using interactive whiteboards and implementing digital curriculum and detail the specific plan for meeting those needs.**

A two-day Agile Mind institute will introduce teachers to strategies that help them in the effective use of Agile Mind in order to strengthen content knowledge, implement online resources, focus on the instructional practices that align standards and assessment, as well as explore, plan, and experience real-time reporting that informs instruction. Three additional advisor sessions (beginning, middle, and end of the school year) will hone teachers' implementation skills, develop teachers' capacity to analyze student performance data, and build teaching skills targeted at actively engaging and motivating students in the core curriculum through technology. Advisor sessions will include pre-session analyses of school data. Advisors will assist teachers in developing implementation skills. Sessions will focus on the specific needs of teachers in implementing innovative classroom instructional strategies. Advisor sessions will also focus teachers on reviewing student data and work; helping teachers implement instructional strategies; co-planning and co-teaching of learning experiences to enhance classroom practices; and differentiating for the instructional needs of students. Weekly planning and monthly department meetings will allow teachers the opportunity for collaboration and discourse regarding instruction, assessment, and overall implementation effectiveness. Administrators will be trained on identifying traits indicative of productive, stage-appropriate implementation.

***Implementation Plan – Digital Content:* Describe your plan for monitoring the implementation of the digital content with fidelity to program guidelines.**

Fidelity of implementation will be monitored through classroom visitation and monthly activity reports. Administrators will observe Agile Mind teachers twice per month to determine appropriate implementation, as well as to provide coaching. Agile Mind professional development will include

specific instruction on observable traits indicative of productive, stage-appropriate implementation. Formalized monthly reviews will serve to inform administrators, teachers, and Agile Mind staff of any addition professional development needs. Agile Mind usage reports will identify teacher usage patterns and be enlisted as evidence of the need for additional implementation support. Teacher online usage of a minimum of 2 hours weekly is desired. Students will be expected to utilize online activities a minimum of 1 hour per week and will also be monitored through the reporting features of Agile Mind.

Implementation Plan – Interactive Whiteboards: **Outline your current inventory of interactive whiteboards, how you can realign current inventory to meet program goals of one interactive whiteboard per classroom mathematics teacher, and what funds you would apply for in order to address these gaps.**

There are no Interactive White Boards available to mathematics teachers and students at Jasper Middle School or Jasper High School. Purchase of 9 Interactive Smart Boards with LCD projectors permanently mounted in classrooms of all teachers in grades 6-8 mathematics and Algebra I would provide teachers with an instructional tool that will allow for preparing, delivery, and interaction of student lessons that positively impact the attention, attitude, and motivation of students. The addition of SMART Notebook Math Tools will enable teachers to represent concepts symbolically, numerically and visually as a means to significantly improve student engagement and retention of concepts. Professional development would grow and hone teachers' ability to create lessons and presentations that are dynamic and effectively incorporate interactive technology.

Implementation Plan – Online Assessments: **Describe each school's capacity and commitment to administer online ISTEP+ and ECA assessments, as well as Acuity Assessments, both with and without additional lab space that grant funds could provide. Describe how teachers will ensure that students are trained on how to properly complete online assessments.**

All students in grades 6-8 currently participate in Diagnostic Acuity assessments 4 times per year in the current lab space available. Addition of Acuity Algebra will complement the district

assessment plan. Current lab space limits the capability of students to participate in online ISTEP+ and ECA assessments within the State prescribed assessment windows. Additional lab space and flexible scheduling at both Jasper Middle School and Jasper High School would enable online assessment on all grade 8 ISTEP+ assessments and Algebra I ECA assessments. Participation in Acuity training and online assessment webinars will provide teachers with the necessary tools to effectively facilitate online testing. Teachers will utilize weekly scheduled computer lab times to assess students and to familiarize students with the functions of the technology and their application toward online assessment. Engagement and interaction in online test-preparation activities will minimize the potential gaps that could occur as a result of unfamiliar test format.

how?

IV. BUDGET				
See program overview for allowable costs. List each expenditure on a separate line.				
Expenditures Budget (Use a separate line for each expenditure, and add rows as needed)				
Expenditure Description	**Person Responsible**	**Cost per Unit**	**Number of Units**	**COST**
Digital curriculum subscriptions (list vendor)				
• *Agile Mind*	Dr. Tracy Lorey	$30	1010	$30,300
Professional development reimbursements				
• Teacher Stipend for Summer Agile Mind and Smart Board Training	Dr. Tracy Lorey	$300	9	$2,700
Interactive whiteboard (list make and model number)				
• SMA SB680 Interactive Smart Boards	Dr. Tracy Lorey	$1,399	9	$12,591
• NEC CP41 LCD Projectors	Dr. Tracy Lorey	$667	5	$3,335
• NBMT -100-LI0 Smart Notebook Math Tools	Dr. Tracy Lorey	$999	9	$8,991
• Professional Development – Levels 1 & 2; Lesson Planning	Dr. Tracy Lorey	$5,397		$5,397
Acuity Algebra set-up fee				
There is no set-up fee for Acuity Algebra since we currently use Acuity. However, we would need to provide professional development for Algebra I teachers to introduce Acuity and support the use of Acuity data analysis.				
• Acuity Algebra Teacher Training – Intro to Acuity	Dr. Tracy Lorey	$2,500	1	$2,500
• Acuity Algebra Teacher Training – Acuity Data Analysis	Dr. Tracy Lorey	$2,500	1	$2,500
Cost for Acuity Algebra administration (per student)	Dr. Tracy Lorey	$7.24	306	$2,215.44
Due to Acuity use at JMS, the cost per pupil is adjusted at $2.30/pupil at JMS and $9.30/pupil at JHS.				
Costs related to online assessment				
Jasper Middle School				
• 25 Pro 3000 Computers	Mr. Mike Hile	$605	25	$15,125
• 25 HP Computer Monitors	Mr. Mike Hile	$165	25	$4,125
• Cabling	Mr. Mike Hile	$3,450	1	$3,450
• Installation	Mr. Mike Hile	$2,250	1	$2,250
Jasper High School				

• 25 Pro 3000 Computers	Mr. Mike Hile	$605	25	$15,125
• 25 HP Computer Monitors	Mr. Mike Hile	$165	25	$4,125
• Cabling	Mr. Mike Hile	$3,450	1	$3,450
• Installation	Mr. Mike Hile	$2,250	1	$2,250
			Total Funds Requested	$120,429

LOCAL SHARE*

***This is not a requirement for the grant, but it will help us to determine the additional resources need at the local level.**

Expenditures Budget
(Use a separate line for each expenditure, and add rows as needed)

Expenditure Description	**Person Responsible**	**Cost per Unit**	**Number of Units**	**COST**
Professional Development				
• Agile Minds Institute	Dr. Tracy Lorey	$2,000		$2,000
• Substitutes	Dr. Tracy Lorey	$1,800		$1,800
Additional lab set up				
• Computer Lab Tables	Mr. Mike Hile	$400	25	$10,000
Additional Costs for Interactive Whiteboard (e.g. installation materials)				
• Installation	Mr. Mike Hile	$3,000		$3,000
			Total Funds Requested	$16,800

V. ASSURANCES

By checking each box below, you agree to the following assurances:

- ☑ The LEA assures that Acuity online assessments will be administered to assess student growth during the grant period (e.g. Acuity Predictive or Pre/Post Test; the exact assessments will be determined by the DOE, but will not exceed 3 tests during the school year, excluding ISTEP+ and ECA).
- ☑ The LEA assures that, given favorable results on a statewide level, it will give serious consideration to sustained use of digital curricula in all schools in the LEA until the next textbook adoption cycle (2016-17 school year).
- ☑ The LEA assures that the selected digital curriculum will be implemented, with fidelity, as the core curriculum for all mathematics classrooms (6th Grade, 7th Grade, 8th Grade, and/or Algebra I) at each school that receives grant funds, for the duration of the school year. "With fidelity" implies that districts will take the steps necessary to implement the digital curriculum as outlined by the vendor.
- ☑ The LEA assures that teachers will be provided with professional development necessary to implement digital curriculum with fidelity. Professional development includes, but is not limited to, training on digital curriculum software, integrating interactive whiteboards into a standards-based classroom, and using Acuity assessments to guide instruction.
- ☑ The LEA assures that funds used for interactive whiteboards will remain in mathematics teacher classrooms for the duration of the program. Any realignment of current inventory for these purposes will also remain in effect for the duration.
- ☑ The LEA assures that all 7th and 8th grade students in Algebra I will take the Algebra ECA online.
- ☑ The LEA assures that all students will take the ISTEP+ online, unless the school can demonstrate an inability to test all students online.
- ☑ The LEA assures that all teachers that use digital curriculum will participate in an *anonymous* evaluation of the program to determine its ability to impact teaching methods.
- ☑ The LEA assures that classrooms in which digital curriculum is being used will be available for observation by certain members of the Department of Education, with reasonable notification, to provide for a qualitative analysis of program effectiveness.
- ☑ The LEA assures that all students will complete a survey regarding the effectiveness of the digital curriculum.
- ☑ The LEA assures that all hardware and software implementations will be put in place before the start of the 2010-11 school year and that professional development related to this program will begin before the start of the 2010-11 school year.
- ☑ The LEA agrees to keep such records and to provide such information to the State educational agency, as may be reasonably required for fiscal audit and program evaluation (consistent with the responsibilities of the State educational agency under this part).

VI. SIGNATURES

List the management team of this grant for each school. Each member of the management team should also sign below. Complete this sheet for *each* school that is included in the district's implementation plan.

School Name: Jasper Middle School **Grade Levels:** 6-8, Algebra I

NAME	POSITION	Signature
1. Dr. Jerrill Vandeventer	Superintendent	Dr. Jerrill Vandeventer
2. Dr. Tracy Lorey	District Math Coordinator	Dr. Tracy Lorey
3. Dr. Tracy Lorey	District Assessment Coordinator	Dr. Tracy Lorey
4. Mr. Matt Day	Principal	Matt Day
5. Mr. Jeremy Wolf	Math Department Chair	Jeremy A Wolf

VI. SIGNATURES

List the management team of this grant for each school. Each member of the management team should also sign below. Complete this sheet for *each* school that is included in the district's implementation plan.

School Name: Jasper High School Grade Levels: 6-8, Algebra I

NAME	POSITION	Signature
1. Dr. Jerrill Vandeventer	Superintendent	Dr. Jerrill Vandeventer
2. Dr. Tracy Lorey	District Math Coordinator	Dr. Tracy Lorey
3. Dr. Tracy Lorey	District Assessment Coordinator	Dr. Tracy Lorey
4. Mr. Bob Hacker	Principal	Robert M. Hacker
5. Mrs. Joan Schaeffer	Math Department Chair	Joan Schaeffer